REMARKS

The Examiner is respectfully requested to enter this Reply After Final in that it raises no new issues. Alternatively, the Examiner is respectfully requested to enter this Reply After Final in that it places the application in better form for Appeal.

Status of the Claims

Claims 1-3, 5-7 and 10-15 are pending in the above identified application. Claim 9 has been canceled as non-elected subject matter. No claims have been added. Claims 1, 5 and 10-14 have been amended to further define the ethylene/α-olefin copolymer. No new matter has been added by the above amendments. Support is found at page 25, lines 7-12.

Restriction/Election

The Examiner has made the restriction requirement final and has refused to reunite the claims. As such, Applicants cancel claim 9 as non-elected subject matter.

Rejections under 35 USC 102(e)

The Examiner rejects claim 15 as anticipated by Tasaka et al. USP 5,929,165 (Tasaka '165). Applicants traverse the rejection and respectfully request the withdrawal thereof.

Applicants submit that the invention of claim 15 is not anticipated by Tasaka '165. Applicants submit the Supplemental Declaration of Mr. Kobayashi attesting to difference between the product of the present invention and the product of Tasaka '165. The product of Tasaka '165 is made from a different process as in the present invention and results in a different product. Applicants rely on the Supplemental Declaration of Mr. Kobayashi to show that the products of the processes have different properties such as tensile strength, heat resistance, whitening, extrudability and flexibility. Contrary to the Examiner's belief, Applicants are not relying on the Declarations to show unexpected results in this instance. Instead, Applicants demonstrate that the products of the two processes are not identical and have different properties. If in fact, the products were identical then the products would have identical properties. This is not the case. As such, applicants submit that the rejection should be withdrawn.

Rejections under 35 USC 103(a)

The Examiner rejects claims 1-3, 5-7 and 10-14 as obvious over Tasaka '165 in view of Aida '781 and Tasaka '165 in view of Nosu '454. Applicants traverse the rejection and respectfully request the withdrawal thereof.

Applicants amend the claims to further define ingredient (c), the ethylene/α-olefin copolymer, as a copolymer that is synthesized

in the presence of a single site catalyst. Tasaka '165 discloses an ethylene/α-olefin copolymer synthesized in the presence of a multi-site catalyst. Tasaka '165 does not disclose or suggest this ingredient (c) as claimed in combination with the other ingredients. The presently claimed invention, where ingredient (c) is synthesized in the presence of a single site catalyst, is completely different from an ethylene/α-olefin copolymer synthesized in the presence of a multi-site catalyst because the reaction mechanism is completely different.

As a result of the ethylene/α-olefin copolymer being synthesized in the presence of a single-site catalyst, the resultant fire retardant resin composition and the molded part have unexpectedly superior properties over a resin composition made from an ethylene/α-olefin copolymer synthesized in the presence of a multi-site catalyst. Please see the Declaration of Mr. Kobayashi filed with the Reply of December 26, 2001 and the Supplemental Declaration of Mr. Kobayashi filed herewith.

The conventional method of synthesis is with a multi-site catalyst. This is the method employed in the cited art. When products, such as wires and molded plugs are made having a sufficient fire retardancy, the products also have a very poor outer appearance and poor whitening characteristic.

The Examiner asserts that a poor outer appearance or whitening characteristic is merely an aesthetic feature. Applicants

disagree. Instead, the outer appearance and whitening characteristic are physical properties of the composition and should be thusly construed. The products of the present invention have achieved a high fire retardancy and yet have an excellent whitening characteristic and outer appearance. Please see the Supplemental Declaration of Mr. Kobayashi, which further explains this phenomena of having an excellent whitening characteristic along with an excellent fire retardancy.

The whitening phenomena is influenced by the flexibility of the wire or molded plug when blending and the outer appearance is influenced by the flowability of the resin composition to be extruded. The outer appearance and whitening characteristic are used to evaluate whether a resin composition has suitable physical properties. For this reason, the outer appearance is sometimes referred to as the surface property in the specification.

Applicants also submit in response to the Examiner's comments regarding the characteristics outlined in the specification that the characteristics demonstrated in the specification and declaration are properties of the composition and of the composition on a wire. See, for example Table 1, which demonstrates extrudability and moldability. Of course, these characteristics are representative of the composition and not the wire. Extrudability refers to the composition's ability to be

extruded from a container. Moldability refers to the composition's ability to be injection molded in a satisfactory manner.

Applicants also submit that the single example in the Declaration is sufficient to show unexpected superior results. Applicants believe that to require more than one example would be an enormous burden on Applicants. Applicants have submitted comparative data in the specification and in the Declaration filed on December 26, 2001. Applicants also submit a Supplemental Declaration attesting to the superior properties of the present invention and how these properties were unexpectedly obtained. As such, Applicants submit that the burden has been met and to require otherwise is unjust.

Conclusion

As Applicants have addressed and overcome all rejections in the Office Action, Applicants respectfully request that the rejections be withdrawn and that the claims be allowed.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Kecia Reynolds (Reg. No. 47,021) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of $400.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made
Declaration of Mr. Kobayashi

(Rev. 02/20/02)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 9 has been canceled.

The claims have been amended as follows:

1. (Twice amended) A fire-retardant resin composition, which comprises:

a thermoplastic resin component (A) comprising (a) 100 parts by weight of a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of a nonaromatic-series softening agent for rubber, (c) 30 to 400 parts by weight of an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, and (d) 0 to 200 parts by weight of a polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of an organic peroxide, (f) 0.03 to 1.8 parts by weight of a (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of a metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent, wherein the silane coupling agent is a silane compound having a vinyl group or an epoxy group at its terminal; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent, wherein the silane coupling agent is a silane compound having a vinyl group or an epoxy group at its terminal; and

the fire-retardant resin composition is a mixture of the above formulation that is heated and kneaded at a temperature equal to or higher than the melting temperature of the thermoplastic resin component (A).

5. (Twice amended) A fire-retardant resin composition, which comprises:

a thermoplastic resin component (A) comprising (a) 100 parts by weight of a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly

made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of a nonaromatic-series softening agent for rubber, (c) 50 to 250 parts by weight of an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, and (d) 0 to 100 parts by weight of a polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of an organic peroxide, (f) 0.03 to 1.8 parts by weight of a (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of a metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent, wherein the silane coupling agent is a silane compound having a vinyl group or an epoxy group at its terminal; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent, wherein the silane

coupling agent is a silane compound having a vinyl group or an epoxy group at its terminal; and

the fire-retardant resin composition is a mixture of the above formulation that is heated and kneaded at a temperature equal to or higher than the melting temperature of the thermoplastic resin component (A).

10. (Twice amended) A molded part, which is obtained by molding a fire-retardant resin composition,

wherein the fire-retardant resin composition comprises:

a thermoplastic resin component (A) comprising (a) 100 parts by weight of a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of a nonaromatic-series softening agent for rubber, (c) 50 to 250 parts by weight of an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, and (d) 0 to 100 parts by weight of a polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of an organic peroxide, (f) 0.03 to 1.8 parts by weight of a (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of a

metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent; and the fire-retardant resin composition is a mixture of the above formulation that is heated and kneaded at a temperature equal to or higher than the melting temperature of the thermoplastic resin component (A).

11. (Twice amended) A method for preparing a fire-retardant resin composition, which comprises heating and kneading, simultaneously, at the temperature equal to or higher than the melting temperature of the following thermoplastic resin component (A), (a) a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a

hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) a nonaromatic-series softening agent for rubber, (c) an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, (d) a polypropylene resin, (e) an organic peroxide, (f) a (meth)acrylate-series and/or allyl-series crosslinking aid, and a metal hydrate (B), to carry out crosslinking,

wherein the fire-retardant resin composition comprises:

the thermoplastic resin component (A) comprising (a) 100 parts by weight of the block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or the hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of the nonaromatic-series softening agent for rubber, (c) 30 to 400 parts by weight of the ethylene/α-olefin copolymer, and (d) 0 to 200 parts by weight of the polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of the organic peroxide, (f) 0.03 to 1.8 parts by weight of the (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of the metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A);

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent.

12. (Twice amended) A method for preparing a fire-retardant resin composition, which comprises heating and kneading, simultaneously, at the temperature equal to or higher than the melting temperature of the following thermoplastic resin component (A), (a) a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) a nonaromatic-series softening agent for rubber, (c) an ethylene/α-olefin copolymer <u>synthesized in the presence of a single site catalyst</u>, (d) a polypropylene resin, (e) an organic peroxide, (f) a (meth)acrylate-series and/or allyl-series

crosslinking aid, and a metal hydrate (B), to carry out crosslinking,

wherein the fire-retardant resin composition comprises:

the thermoplastic resin component (A) comprising (a) 100 parts by weight of the block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or the hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of the nonaromatic-series softening agent for rubber, (c) 50 to 250 parts by weight of the ethylene/α-olefin copolymer, and (d) 0 to 100 parts by weight of the polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of the organic peroxide, (f) 0.03 to 1.8 parts by weight of the (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of the metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent; or (ii) when the metal hydrate (B) is in an

amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent.

13. (Twice amended) A method for preparing a fire-retardant resin composition, which comprises:

a first step of heating and kneading (a) a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) a nonaromatic-series softening agent for rubber, (c) an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, and (d) a polypropylene resin, to obtain a thermoplastic resin component (A), and

a second step of heating and kneading, at the temperature equal to or higher than the melting temperature of the thermoplastic resin component (A), the resultant resin component (A), (e) an organic peroxide, (f) a (meth)acrylate-series and/or allyl-series crosslinking aid, and a metal hydrate (B), to carry out crosslinking,

wherein the fire-retardant resin composition comprises:

the thermoplastic resin component (A) comprising (a) 100 parts by weight of the block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or the hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of the nonaromatic-series softening agent for rubber, (c) 30 to 400 parts by weight of the ethylene/α-olefin copolymer, and (d) 0 to 200 parts by weight of the polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of the organic peroxide, (f) 0.03 to 1.8 parts by weight of the (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of the metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent.

14. (Twice amended) A method for preparing a fire-retardant resin composition, which comprises:

a first step of heating and kneading (a) a block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional component, and/or a hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) a nonaromatic-series softening agent for rubber, (c) an ethylene/α-olefin copolymer synthesized in the presence of a single site catalyst, and (d) a polypropylene resin, to obtain a thermoplastic resin component (A), and

a second step of heating and kneading, at the temperature equal to or higher than the melting temperature of the thermoplastic resin component (A), the resultant resin component (A), (e) an organic peroxide, (f) a (meth)acrylate-series and/or allyl-series crosslinking aid, and a metal hydrate (B), to carry out crosslinking,

wherein the fire-retardant resin composition comprises:

the thermoplastic resin component (A) comprising (a) 100 parts by weight of the block copolymer made up of at least two polymer blocks A mainly made of a vinyl aromatic compound as its constitutional component and at least one polymer block B mainly made of a conjugated diene compound as its constitutional

component, and/or the hydrogenated block copolymer obtained by hydrogenating the block copolymer, (b) 10 to 100 parts by weight of the nonaromatic-series softening agent for rubber, (c) 50 to 250 parts by weight of the ethylene/α-olefin copolymer, and (d) 0 to 100 parts by weight of the polypropylene resin; and

(e) 0.01 to 0.6 parts by weight of the organic peroxide, (f) 0.03 to 1.8 parts by weight of the (meth)acrylate-series and/or allyl-series crosslinking aid, and 50 to 300 parts by weight of the metal hydrate (B), respectively to 100 parts by weight of the thermoplastic resin component (A),

wherein the metal hydrate (B) is such that (i) when the metal hydrate (B) is in an amount of 50 parts by weight or more but less than 100 parts by weight, 50 parts by weight or more of the metal hydrate (B) to 100 parts by weight of the thermoplastic resin component (A) is made up of a metal hydrate pretreated with a silane coupling agent; or (ii) when the metal hydrate (B) is in an amount of 100 parts by weight or more but 300 parts by weight or less, at least half of the amount of the metal hydrate (B) is made up of a metal hydrate pretreated with a silane coupling agent.